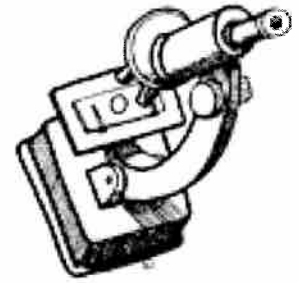


“Let’s Get Small” Activity

Questions to Ponder:

- ✓ How do microscopes work?
- ✓ What role do bacteria and viruses have in the world?
- ✓ How small are bacteria and how do they compare to other microbes in size?
- ✓ Why do scientists need models instead of visual drawings of microbes?
- ✓ How are bacteria harmful or helpful?
- ✓ How do viruses cause illness?



While diseases caused by microbes are very important, there are many microbes that help us out. Oceanic plankton are microscopic plants and animals that form the beginning of the food chain in the ocean. Many produce the very oxygen we breathe. Pond water is also full of such organisms. Lichens and corals depend on microscopic algae to live. The white stripes on many tulip petals are caused by a virus which infects the plant. People could not survive without intestinal bacteria creating several essential vitamins and helping digest food. We would not have cheese, wine, or antibiotics without microbes. However, can you see organisms as small as bacteria and viruses? Why are models often used to study and compare very small objects? In this activity you will use a model to help you “see” the size of viruses and bacteria.

Procedure:

1. Take a piece of hair and examine it with a magnifying glass. Does it look larger under the magnifying glass? _____. Examine a piece of hair from another lab group member. Compare its thickness, or width, to your own hair.
2. If you were going to make a model of a piece of human hair, would you make it larger, or smaller than a real piece of hair? _____. Do you think microbes are smaller than the width of a piece of hair? _____. If you needed to make a model of a microbe, would you make it larger or smaller than the original? _____.
3. Lay your meter stick or ruler out in front of you. What kinds of things do you measure in meters? List 5 things:

Viruses, bacteria, and protozoa are so small that we use much smaller measurements for them. They are even so small that we cannot use any sort of “stick” to measure them at all!!!